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AUTHOR	Elias, Patricia
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ABSTRACT

A number of findings of the Targeted Research and Development Program in Reading (TRDPR), Project 3 are reviewed, and the means by which they were arrived at are described. The outcome of the review is a statement of needs in reading research based on the TRDPR synthesis of what it defined as quality research. Some of the conclusions were the following: (1) Controversy about literacy reports can be explained in part by traditional use of norm-referenced tests which require failure of some to balance success of others. Therefore, it is not currently possible to set accurate standards for literacy or to know precisely who has achieved it. (2) The preparation of teachers is dictated by state certification laws and effected by university programs. Inequalities in state requirements and inconsistencies between instructional programs and those requirements make careful analysis of teacher preparedness impossible. (3) Inadequacies of evidence garnered from the research reviewed may be blamed on inadequacies in research design and description. Where programs, methods of analysis, etc. are not carefully described, or where conditions are not carefully controlled, it is impossible to synthesize findings and to generate universal conclusions, and (4) Reading disability does appear to be widespread, some improvements have been made in reading achievement, and not much has changed in teacher education in the last 10 years. (MS)

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A Critical Review of the Information Base for Current Assumptions Regarding the Status of Instruction and Achievement in Reading in the United States*

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Patricia Elias
Advisory Services Department
Educational Testing Service
Berkeley, California

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The somewhat cumbersome title, A Critical Review of the Information Base for Current Assumptions Regarding the Status of Instruction and Achievement in Reading in the United States, embraced the work done in the Targeted Research and Development Project No. 3. This was one of three projects funded by the U.S. Office of Education as first steps toward building a coherent foundation upon which realistic goals for the Right to Read effort could be based. The charge of the Office of Education to Project 3 was to determine whether or not an accurate appraisal of the status of reading achievement and reading instruction in the United States could be documented by an examination of existing literature in the field of reading. Project 3 focused on three sub-areas of the literature about reading and addressed itself to three principal tasks:

1. The determination of the extent and distribution of the national reading problem,

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2. The determination of the frequency of use and distribution of the instructional methods, approaches, materials and equipment for reading instruction,
3. The description of the nature and extent of current practice in the training of those who teach children to read.

To determine if accurate appraisals could be made concerning these issues, the project staff had to resolve two major problems. One was to develop and implement a comprehensive and systematic method for the selection of the literature for the bibliography of the project. The other was to design and implement a procedure for the systematic review and analysis of that literature. Guidelines for both processes were those provided by the writing of William Gephart in the background report for all three projects. The procedures he proposed for a literature search afforded direction for the selection of materials to be reviewed in this project. Selected sections of those procedures, as well as the elements he proposed for profiling the methodological adequacy of completed research, were used as the foundation of the review process itself.

Two professional committees were used to guide the collection of materials for review and to monitor interpretations of evidence. The first, a "technical review" committee, composed of staff members from Educational Testing Service, designed, implemented, and monitored a documents review process, and developed procedures for the selection of the literature to be reviewed. This committee included research specialists, an experienced public school educator, and an experienced teacher trainer. The second, a "logic committee", composed of acknowledged experts in fields

related to the tasks of the project, provided a combination of professional judgments which shaped the literature search and selection process. A third interrelated unit was the group of reader-evaluators who did the actual critical review of all documents.

The preliminary bibliography searches involved a computer sweep through all the ERIC documents to date, a hand search of the last ten years of the Education Index, Psychological Abstracts, Sociological Abstracts and Dissertation Abstracts. Searched as well were the publications of government agencies, state departments of education, selected educational research institutes and individuals, foundations, publishers of both reading materials and tests, teacher training institutions, and selected local school districts.

All references developed through the preliminary selection procedure were submitted to the advisory group of reading experts. Members of this committee evaluated the preliminary set of references according to what they believed about the quality of the data and the probable relevance of the references to one or more of the specific research tasks. These evaluations were then combined and a consensus as to inclusion was reached.

The general policy for accepting a document for review was that no reference was included in the bibliography without having been evaluated and ranked by all members of the Logic Committee, although some references were included on which there was not total agreement as to worth or relevance. In following these procedures we hoped to obtain a relatively unbiased body of documents to form the data base for the project.

Monitoring of the developing bibliography by the staff occurred continually throughout the project and took several forms. Every annual review of reading research published in the last decade was searched for

references not already included in the preliminary bibliographic lists submitted to the Logic Committee. The same process was used to examine and select citations from occasional reviews of the literature, documents appearing in the published ERIC bibliographies after the initial computer-assisted search, and other bibliographies provided by educational and research organizations.

A second form of monitoring employed was the comparison, midway through the project, of a list of the journals cited in the project bibliography with that of Summers published in the 1968 Reading Research Quarterly. Summers listed the journals which formed the 1956 to 1966 data base for the ERIC collection. Any journals of the 40 included most frequently in the ERIC data base which had not appeared in our project bibliography were searched for relevant articles.

Actual critical review of all documents selected by the Logic Committee was performed by a Committee of Readers. These were doctoral candidates in reading, educational psychology, and sociology, and one law student from the University of California, Berkeley. In their review the readers used a single review format which permitted them to make judgments concerning the adequacy of the data reported, and the degree to which the reported characteristics, conceptualizations, methodology or status could be determined from the evidence presented in the literature. The review format was developed by members of the ETS research staff in the Western Office who were responsible for writing the final state-of-the-art reports. This group of authors was also responsible for training the readers in the use of the review format. Information included in the format was both objective and subjective. In addition to reviewing a document for specific

population or environmental characteristics which were relatively easy to define, readers were asked to make judgments concerning data generation quality and representativeness, as well as the appropriateness of data analysis according to Gephart's model for review. Reviewers also included relevant data tables and an abstract.

Two hundred documents from the project bibliography were reviewed independently by pairs of readers as a basis for obtaining reliability estimates among the project readers. The variables selected for examination were those on which reader agreement was necessary for either the operational or analytical aspects of the project. The reliability coefficients ranged from .62 to .89.

Every document reviewed for the project was subjected to the same reviewing process in which it was judged for relevance, assigned and specifically related to the tasks and subtasks of the project, profiled as to the adequacy of the research, and summarized. Of the thousands of documents considered, 1,855 were selected to be reviewed for the project.

It is my privilege to present papers authored by Abraham Carp and Richard Harsh. Dr. Maxwell will present the paper she co-authored with George Temp. As I suspect that the section of most interest to this group is that being presented by Dr. Maxwell, my description of the other two chapters will be brief. It is my understanding that ERIC/CRIER, possibly in conjunction with the International Reading Association, will soon publish sections of the report. The complete report will be available on microfiche in the ERIC collection.

Al Carp in his chapter, The Reading Problem in the United States, reviewed the literature published in the United States between 1960 and 1970

to determine the extent of the reading problem in the country. However, the charge of the USOE to identify, analyze, and summarize existing survey and test data which indicate the reading ability of various populations in relation to the individual and social needs of the populace presented some problems.

Prior to the review, it was assumed that a body of literature existed which documented the reading ability of various subpopulations as a function of sex, age, race, socioeconomic status, etc., and that the various standards of reporting utilized in this literature could be equated to individual and social needs. In the actual review process this assumption was not met in fact. There exists neither a good estimate of the reading ability necessary to function satisfactorily in modern society nor a satisfactory estimate of the absolute reading achievement of reasonably defined subgroups in the United States.

United States census data provided much of the information on the educational achievement and state of literacy of various subgroups of the total population. Both the number of years of education completed and the status of literacy are categorized by a large number of demographic variables. The U.S. census definition of literacy, based on self-report, assumes that all persons who have completed five years or more of school are literate. Illiteracy is defined as inability to both read and write English, or any other language. According to census data, the illiteracy rate in the United States is currently one percent of the population 14 years old and older. In the decade since 1959, the number of illiterate persons has decreased despite an increase in the number of persons 14 years old and over.

Illiteracy, as defined by the Bureau of the Census, is primarily

a problem of years of schooling completed. Illiteracy rates drop sharply as even a limited number of years of school increase. With the almost universal availability of 12 years of free public education in the U.S. today, the "production of new illiterates" is probably at a minimum. Illiteracy as a significant problem in the United States today is related to age (77% are over 45), geographic region, and to specific ethnic populations.

It must be cautioned, however, that these statistics are based on self-report, or answers to questions about literacy, not to demonstrations of performance. The experience of the armed forces in World War II and later indicated that the standard definitions of literacy did not serve to delineate the limited ability of many servicemen to communicate with their fellow men. Not only those defined as illiterate by reason of limited number of school years, but some servicemen with education beyond this limited point, were found to be incapable of performing military functions involving reading and writing.

There is a serious functional literacy problem in the U.S. when functional literacy is equated to number of years of school completed. The size of the problem depends on the level of educational attainment accepted as the standard of functional literacy. If completion of five years of formal schooling is accepted as the standard, there are some eight million functional illiterates; if eight years of schooling is the standard, there are almost 19 million functional illiterates. And if we accept the completion of 12 years of schooling, there are over 70 million functional illiterates. Whatever criterion we choose, the educational deficit is related to age, race and ethnic orign, urban, suburban, and rural

residence, and region of residence in the country. For example, of the six million persons over 14 years old who have had less than five years of schooling, about 320,000 are under 25 and about four million are over 55. In terms of educational deficiency in the adult populations, those of Puerto Rican or Mexican origin show the greatest deficit, followed by the Black population.

Another body of literature reviewed for the project included test data, and survey and technical material, in which populations were described in grade equivalent scores based on nationally normed tests of reading achievement. Despite the variations based on different tests with differing content, the level of deficit observed was relatively constant. There is no generally accepted test which can serve as the criterion and no extant calibration of tests to a common frame of reference. But some aspects of the reading problem based on norm-referenced tests permit an estimate of the reading deficit for students who are still in school.

If we accept a grade equivalent of 5.0 as the standard for meeting social and literacy needs, about one percent of those with 12 years of education, 3 percent of those with 10 years of education, 13 percent of those with 8 years of education, and 30 percent of those with 6 years of education will read below this standard.

If we accept the figure of 8.0 as the standard, then 13 percent of those with 12 years of education, 24 percent of those with 10 years, and 50 percent of those with 8 years will fail to meet the standard.

The over-all conclusion derived from this review was that the data base does not exist to permit adequate estimates of the reading problem in the United States in terms of a standard of meeting "individual and social needs". The statement of the problem implies the existence of

a standard and first priority should be given to the development of such a standard. The Office of Education has recognized this problem and through targeted Research & Development Project #1, has funded research to create such an instrument and to collect performance data indicating the extent to which various population subgroups meet the standard.

The incidence of reading problems from kindergarten through grade 12 has been demonstrated, but the extent of the problem depends on definitions, measures, and populations described. If the average score is defined as the standard, obviously, half of the population will fail to achieve the standard. Larger proportions of individuals whose families are characterized by financial, housing, education, and other disadvantages will fall below the average. However, until some criterion other than a norm-referenced one is accepted, somebody is going to have to read below average. The way various groups perform in relation to the norm may be changed by various intervention activities, and their relative positions may be changed, but fifty percent will still be below average and approximately fifteen percent of those with 12 years of school will read below the ninth grade level. The current information on the relative deficit of various groups does present, however, targets for intervention and suggests the ones that present the greatest need.

The particular goals, however, are not so easily defined. A current target expressed by some of insuring "a year's growth for every year for every pupil" is probably not attainable. A more modest goal related to performance or criterion-based measures may be achievable. With these types of measures, groups may still be differentiated on the basis of numbers or percents able to reach the standard. They may also be differentiated on the basis of other factors, such as time, or effort, or

cost to meet the standard. More effort should be directed to developing performance-based standards for reading in the school population similar to those under development for adults, particularly for the upper school grades. Attempts to develop specific objectives related to reading and to translate these into performance-type measures would provide appropriate standards for school-age reading programs which norm-referenced tests do not supply.

Further efforts need to be directed to the economic consequences of reading, particularly in the adult population. While there is ample evidence that measures of academic achievement, including reading, correlate with indices of economic status, it is not necessarily true that improvement of reading will produce economic benefits. Much more needs to be known about the reading requirements of jobs. The requirements that many employers have for school certificates or for reading achievement may have no real relationship to the requirements of jobs. Recently the courts and the Equal Employment Opportunity Commission have required employers to demonstrate a relationship between job performance and educational requirements, achievement, or intelligence test scores in order for these requirements to be valid. Despite the apparent success of various federally and state funded programs to provide instruction in reading to unemployed adults, it has not been demonstrated that improvement in reading is the most critical factor in increased employability. Nor is the information available to determine the cost/benefit ratio of improving reading as compared to the same amount of money spent in some other activity, for example, the cost of changing the reading requirements of forms which people must fill out to "survive" so the forms are more understandable and less subject to error.

The "Right to Read" is a right that every individual should have, but effective reading may not solve all our economic and social problems.

Richard Harsh in his chapter, the Nature and Extent of Current Practices in Educating Those Who Teach Reading, addressed himself to the determination of whether the explicit characteristics of current practices in preparing those who teach reading could be identified from the relevant literature, and, whether these characteristics could be related to the reading ability of the student population. The elements of a chain were examined, beginning with state legislation related to reading instruction, and extending through state certification boards' translation of legislative requirements into teacher education requirements, teacher education programs for graduation and certification, and local practices operating to meet state and district requirements for reading instruction.

To provide a statutory background for the certification requirements of the states, the education code of each state was reviewed to determine the nature and extent of the laws which might pertain to the teaching of reading. Despite what you may think, most states (28) do not have laws that mention reading as a specific requirement, although 16 of these states have statues which require instruction in specific subjects. Twenty-three states have legislation requiring that reading be taught in the schools. None of the state education codes prescribe specific materials, time, or methods of instruction for reading or any other subject. The education codes tend to be quite consistent in assigning the determination of such requirements to the state board of education and/or the governing board of the local school district.

All 50 states and the District of Columbia have statutes which require licensing or certification of teachers. However, almost all states have made provisions to grant probationary credentials for those who have not met the regular credential requirements in the event no fully credentialled teachers are available. Although only one state has a statute specifying the certification of reading teachers, 22 have made provisions for the state board of education to issue "special" certificates for certain subjects or fields as deemed necessary.

The state education codes provide a broad framework for the establishment, government, and operation of the public schools, but generally do not make specific requirements for the content, materials, methods, or teacher certification related to the teaching of reading.

What are the State certification requirements for those who teach reading? All states require professional school personnel who teach in the public schools to hold certificates issued by the legal authority. In all but four states a minimum of a Bachelor's degree is required for elementary and secondary credentials. While the predominant practice is to "endorse" the fields of preparation on the secondary teaching certificates, such endorsement is not found in the issuance of elementary credentials. The credential requirements are commonly stated in terms of degrees or amount of academic preparation with extensive use of "approved programs" of training institutions as the means by which teachers may be certified.

The literature contains conflicting and ambiguous information concerning the incidence of reading and reading-related courses required for elementary and secondary certification. The extensive use of the "approved program" approach to certification makes it impossible to form

definite conclusions regarding the presence or absence of reading requirements.

The review of the existing literature indicates that it is not possible to adequately describe the nature and extent of the preparation of elementary and secondary teachers to teach reading from the reports of state certification requirements.

The available literature suggests that states designate specialists in reading by a variety of titles, endorsements, or credentials. The common certification requirement is in terms of courses of particular title or content, with the majority of states also specifying teaching experience. The requirements for all states are described in such a variable and inconsistent manner that explicit conclusions are impossible. The only conclusions that may be made are that no apparent regional trends exist and no common criteria are used by all states for the certification of reading specialists.

What are the current practices of institutions preparing those who teach reading? Since the review of the literature revealed no current national summarization of the offerings and requirements of institutions providing teacher education programs, the published catalogs from 374 of these institutions were used as the source of the most current information. Institutional requirements and offerings for teacher preparation in reading were specified in the catalogs of 324 institutions in 49 states and the District of Columbia.

Sixty-four percent of the institutions required a separate reading methods course involving from two to three semester hours of study in the undergraduate preparation of elementary teachers. One-third of the institutions required an integrated reading - language arts course

or a general - methods course which included reading for elementary teachers. Twelve percent of the institutions required some form of practical experience or practice teaching concurrent with the required reading courses for the elementary teacher. Only three percent of the institutions listed no reading-methods course requirement for the preparation of the elementary teacher. In addition, 47% of the institutions required those preparing for elementary teaching to take a course in children's literature. All institutions preparing elementary teachers require practice teaching which involved 6 to 16 semester hours generally to be accomplished in the senior year.

The catalog-specified requirements of secondary teachers for preparation in reading were significantly less than the requirements for the elementary teachers. Although only six percent required a reading-methods course, nearly 60% of the institutions offered one or more courses in reading methods at the secondary level.

During the past decade, there appears to have been a very slight change in the requirements of institutions that prepare teachers for elementary and secondary certification. In 1960, as in 1970, the most frequent requirement for certification as a regular elementary or secondary teacher was one course in reading and/or language arts. The institutional requirements for preparation in reading increased slightly for the elementary teacher, while there was a slight decline in the reading course requirements for secondary teachers.

The survey data are not adequate to answer the question of the contents and methods used by institutions to prepare teachers for the instruction of reading. The available information is restricted to courses and semester hours of instruction, and no comprehensive in-

formation is available concerning the specific contents, methods and outcomes of the teacher education programs.

What preparation for teachers or specialists in reading is required or provided by local educational agencies? A survey of the 20 largest cities in the United States revealed that all of the 17 responding cities employ some type of special reading teacher. There is wide variation in the preparation requirements for those special teachers of reading which commonly do not relate to the state certification requirements. More than half of the cities do not require any academic preparation beyond the regular state certification for the special reading teachers. At the same time, approximately one-third of the cities require or provide inservice education, and 10% of the major cities surveyed have indicated adoption of the IRA requirements for reading specialists. Successful experience as a teacher of reading is a common requirement for those who are designated as specialists or teachers of reading in local educational systems.

Neither the reviewed literature nor the documents provided from a sample of the major cities supplied sufficient information to determine adequately the requirements of local educational agencies for the preparation of teachers or specialists in reading.

The surveys reviewed in the literature suggest that professional school personnel perceive the need for more assistance in providing for students with reading disabilities. The surveys suggested that between 50% and 60% of the students identified as having reading problems were not receiving special assistance. The nature and extent of the preparation for the teaching of reading are far less than the professional reading association recommends and less than surveyed

teachers felt they needed. The limited surveys of special ethnic and cultural student populations provide incomplete but suggestive indication that special problems in reading and language development for these groups are to a great extent receiving little attention. Unfortunately, the literature does not provide comprehensive information concerning the preparation and characteristics of those who teach and provide special assistance in reading to pupils with various needs in all regions of the nation.

The review of the literature failed to provide adequate evidence to answer the important questions of the relationship between teacher preparation, teacher performance, and student achievement in reading. The lack of evidence from the literature is not due to a dearth of surveys, writings, and investigations. Rather, it is due to limited or inadequate design of investigations which do not account for the multiple variables interacting in a system of education.

Although no definitive conclusions concerning the relationships of teacher preparation, teacher performance, and student achievement can be made, some of the studies suggest that characteristics called verbal facility, flexibility, and empathy for individual learners are more important teacher characteristics than the degrees and courses acquired in academic preparation. Other studies amplify these suggestions with observations that pupils from diverse ethnic and cultural backgrounds may be understood and communicated with effectively in a learning situation by those who understand and share such experiences by virtue of their own background.

The research and analysis reported in the USOE publication, "Do Teachers Make a Difference?" suggest the new developments needed in

research concerning educational systems. There appears to be a growing acceptance that future educational research must be designed to explain the model of the system of education that includes input, process, and output variables.

The inability of existing research to provide definitive answers to the major questions addressed in this chapter appears to be partially explained by the design of the investigations which commonly used correlational analyses of single variables of student or teacher characteristics. The principle of parsimony appears to be reflected in the designs of the majority of investigations which have sought the one best set of requirements for teachers, the one best teaching behavior, or the one best method of preparing teachers. Surveys and research studies have commonly identified an array of demographic differences among teachers and students but have not investigated the interactions of the multiple variables in an educational system. From this review of the literature, it appears clear that reliable description and understanding of the complex system of education will depend on future research which investigates the context, input, process, and output interactions among the variables of students, teachers, schools, and society.

Project 3 was one of three inter-related projects funded in 1970-71 as part of the USOE Targeted Research and Development Program in Reading. Several basic assumptions underlie all three projects. It is appropriate to summarize the findings of the papers I have reviewed which relate to two of those assumptions. One assumption was that improvement in reading seems to have reached a plateau.

We do not think the literature surveyed for this project supports this as a general assumption. The answer depends, in part, on

what subquestions are asked to define the main question.

If the question is examined from the standpoint of improvement in reading achievement, the work of Gates in 1961 and Schrader in 1968 suggest, at least tentatively, that the reading ability of pupils in the public schools may have improved over the last few decades. Recent Population Reports of the Bureau of the Census indicate that illiteracy, on the whole, has declined in the United States during several decades, despite a significant increase in the population itself. However, the results of this literature search abundantly support the position that low achievement in reading, and even illiteracy, is a significant problem in segments of the population.

The incidence of reading problems in the United States among both the school age and adult populations (as described in Dr. Carp's paper) is related to ethnic and racial group membership, socioeconomic factors, and location of residence. These and other factors, such as age, begin to describe the groups in our population who may be on a plateau of achievement and, thus, appropriate targets for intervention. The generalization that overall improvement in reading achievement has reached a plateau could be supported only when and if optimum effort has been made to effectuate appropriate reading programs for members of these subgroups.

If the problem is examined from the standpoint of improvement in teacher education, it is apparent from our survey of the descriptions of courses in reading instruction that there has been little institutional response to the 1961 challenge of Austin and Morrison to improve teacher education. Another assumption was that summaries of research on reading indicate that most of the research in the field has been done in a manner

that prohibits synthesis.

Those who participated in this project sympathize with the problems of previous synthesizers in the field of reading. We found that the literature typically contains testimonials about programs, or techniques, or, reports the results of research in a manner that is difficult to synthesize. Most of the research on method, for example, has been based on the assumption that method alone makes a major difference in learning to read and has ignored, or left uncontrolled, other significant variables such as learner and teacher characteristics. The reader-evaluators who worked in this project and the authors of the papers of this report pointed out that the application of sophisticated statistical analyses to variables that are vague, lack operational definition, and do not reflect the complexity of the reading act, is futile. Our experience tends to confirm the basic assumption that research, as reported, has been done in a manner that, if not prohibiting synthesis, does make synthesis difficult and tenuous.

The question posed to Project No. 3 by the United States Office of Education was whether or not it was possible to document from existing literature the status of the several tasks posed to the project. This was to be accomplished by the review of that literature in a manner which utilized a defined and consistently applied set of standards. The standards suggested to be applied were those defined by Dr. Gephart as dimensions required of quality research. We have applied those standards in an extensive review of the relevant literature. We feel the results will challenge the research community in reading. We hope they contribute to a better understanding of some of the problems involved.